of man, without which these patented bio-structures would not have been possible, nor would they have specific, novel, and artificial utility as expressed in the amended claims, which make repeated use of terms such as "artificially-induced self assembling purified Clathrin protein molecules", "precise control over its fabrication", "man-made" and "non-naturally occurring" to express that the invention is sui generis. The instant invention is a non-naturally occurring, unique bio-system, as was seen in section A, above, and which is also expressed in the amended claims.

Thus, there is ample patent precedence that self-assembly of bio-systems with complex internal structures that closely mimic natural systems is patentable so long as they have novel utility and show the hand of man, like the instant application. Thus, using this self-assembling feature as the basis for rejection by the USPTO of claims in the instant application is without merit.

B.5. With regards **(B.IV, above)**, and specifically, a reference to Lee by the USPTO that describes a general-purpose thin film methodology, and which is summarized by Lee who states, it "may provide new pathways to organize electronic, optical, and magnetic materials...", this methodology is obviously not specific to quantum dots, which are incidental to the method itself. Also, the approach outlined by Lee--thin-film deposition and structural ordering--is totally dissimilar to complex 3-D structures using bio-engineered clathrin cages, as in the case of the instant invention. In fact, these two methods for self-assembly are diametrically opposed and represent two totally different approaches to using biomaterials to order and structure composite nano-materials. This is expressed in the instant application and amended claims, which state that the structure is uniquely bio-engineered and non-naturally occurring. One cannot compare one method with the other, except, perhaps, in a theoretical sense. But theoretical arguments do not serve as the basis for a patent, which must have specific and novel utility, as does the instant invention.

B.6. As for the USPTO claims rejection (**B.IV**), also based on Lee, which summarizes with, "the virus affects the magnetic radiation experienced by the quantum dots" (and thus presumably anticipates the instant invention), the USPTO itself states on

page 4 in its Office Action Summary re patent application number 10/660/976, in its response to the instant inventors' communications filed on April 24, 2006, that "For example, Lee et al. [Science, May 3, 2003, Volume 296, pages 892-895] shows usage of quantum dots in viruses but does ***not show how*** such particles can be used in quantum mechanical calculations." Thus, the USPTO **agrees** with the instant inventors that no quantum mechanical utility is shown in Lee.

This USPTO rejection argument also fails in the face of issued patent precedent. A simple search shows numerous patents issued by the USPTO that use quantum dots in various configurations and applications; for recent example, patent 7,108,915, "Surface-modified semiconductive and metallic nanoparticles having enhanced dispersibility in aqueous media", Adams, et al, September 19, 2006.

This issued patent states that; "The external source of energy can be of a variety of types including chemical, thermal, electrical, magnetic, electromagnetic, and physical, or any other type of energy source capable of causing a system to be excited into a state higher in energy than the ground state."

This patent goes on to state, "It is an additional object of the invention to provide a monodisperse population of water-dispersible nanoparticles wherein the population is characterized in that it exhibits no more than about a 10% rms deviation, preferably no more than about a 5% rms deviation, in the diameter of the inner core."

In other words, this issued patent essentially describes a thin-film deposition of quantum dots in a non-solid medium that responds to a magnetic field, among other forms of stimulation. Thus, the same quantum dot methodology as put forth by Lee also anticipates this issued patent. In fact, this patented invention states, that, "...it is to be understood that unless otherwise indicated this invention is not limited to specific nanoparticle materials, amphipathic dispersants, or manufacturing processes, as such may vary." Therefore using genetically engineered viruses, like Lee's, qualify as well. But this patent was nonetheless issued. This example shows once again that USPTO patent precedence takes priority over any alleged anticipation, so long as the invention shows that the structures have novel utility, as does the instant application.

Thus, using Lee as an effective argument for claims rejection in the instant patent can be considered nullified by patent 7,108,915. Precedence is all, per past USPTO actions. As with liposomes, capsids, and other well-known structures and materials, it is not the base or composite material usage, e.g., quantum dots, that matters, nor the manner in which they are activated. But rather, the USPTO has historically shown that it is the specific and unique utility that results from using these overall materials in a distinctive, new way, as is the case in the instant invention, and which is also expressed in the amended claims.

B.7. Similarly, another USPTO argument is undone by precedence when it states that Claims 1 and 50 are rejected as being unpatentable **(see item B.V, above)** because, "It would have been obvious for someone or ordinary skill in the art at the time of the instant invention to combine the naturally occurring clathrin teachings of Zampighi et al, and Greene et al. to result in the instantly claimed invention..."

Firstly, simply combining Zampighi's and Greene's teachings about naturally occurring clathrin to create a viable quantum computer element is not feasible and is effectively unworkable, for all the various reasons listed above. Similarly, neither Zampighi nor Greene teach how to create a bio-engineered clathrin system capable of quantum information processing as is expressed in the instant application specification and as reflected in the amended claims.

Secondly, a simple search will show there are many USPTO issued patents that include or utilize well-known bio-material compositions, like liposomes and capsids as the basic feature of the invention. In all these cases, "It would have been obvious for someone or ordinary skill in the art at the time..." to combine various liposome, and capsid teachings to create the materials used in the inventions listed in the below liposome-related and capsid patents (and there are many more such):

7,112,337, Liposome composition for delivery of nucleic acid, Huang, et al. September 26, 2006.

7,108,863, Liposome composition for improved intracellular delivery of a therapeutic agent, Zalipsky, et al. September 19, 2006.

7,101,570, Liposome compositions and methods for the treatment of atherosclerosis, Hope, et al. September 5, 2006.

7,101,532, Liposome containing hydrophobic iodine compound, Aikawa, et al. September 5, 2006

7,037,520, Reversible masking of liposomal complexes for targeted delivery, Smyth Templeton, May 2, 2006

7,033,834, Methods and means for targeted gene delivery (using viral capsids) Valerio, et al. April 25, 2006.

All the above patented inventions (which are listed in a separate document and incorporated as reference) use well-known biomaterials, and their inventors also had knowledge of the teachings of others to create their inventions, as is obvious to anyone skilled in the art. But the use of well-understood bio-building blocks did not negate the unique and individual utility of each of these inventions. Once again, USPTO precedence shows that novel utility outweighs any purported anticipation based on generic teachings. The instant invention is sui generis, which is expressed in the instant application specification and amended claims, which make repeated use of terms such as "man-made", "can be calculatedly expressed", and "non-naturally occurring" to express that this is a novel invention.

C. Per 35 U.S.C.103 (a), and 37 C.F.R. 1.56, and potential 35 U.S.C.102 (e), (f), or (g) prior art under 35 U.S.C. 103(a), re commonly owned claims, all claims in the instant patent are commonly owned by Franco Vitaliano and Gordana Vitaliano.

D. Re other Art, Journal Articles, etc., it should be noted that F. Vitaliano's article, "The Next Big Thing That Will Change Absolutely Everything," (2001) was a general information article that did not describe in any detail whatsoever the instant invention.

Re F. Vitaliano's "VXMaia: A New Quantum Computing System" (PowerPoint presentation, June 18, 2002), this was a closed-door, highly secure briefing to the DOD and was not intended for distribution or publication.

Re F. Vitaliano's "VXMaia: A New Quantum Computing System for Biotech" (PowerPoint presentation, October 23, 2002), this was a closed-door presentation done under NDA and was not intended for distribution or publication.

Lastly, F. Vitaliano's "ExQor: A New NBIC Platform" (PowerPoint presentation, September, 2003), was also closed-door presentation and was not intended for distribution or publication, and was done after filing of the instant patent on September 13, 2003.

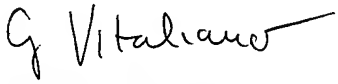
All other listed documents have no specific bearing in any way on the instant application and are viewed as being background information, only, as they do not specifically teach how to create bio-engineered quantum computing elements and systems using bio-engineered clathrin protein.

Date: October 13, 2006

Filed Pro Se

Franco Vitaliano

and



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Incorporated As Reference, Re Section B.4. In Inventors' Response

7,112,330, Method for producing yeast expressed HPV types 6 and 16 capsid proteins, Buonamassa, et al., September 26, 2006

7,105,303, Antibodies to hepatitis C virus asialoglycoproteins, Ralston, et al., September 12, 2006,

7,094,409, Antigen arrays for treatment of allergic eosinophilic diseases, Bachmann, et al., August 22, 2006

RE39,229, Binding proteins for recognition of DNA, Choo , et al., August 8, 2006

7,060,291, Modular targeted liposomal delivery system, Meers, et al., June 13, 2006

7,063,860, Application of lipid vehicles and use for drug delivery, Chancellor,et al., June 20, 2006

7,048,949, Membrane scaffold proteins, Sligar, et al. May 23, 2006.

Incorporated As Reference, Re Section B.7. In Inventors' Response

7,112,337, Liposome composition for delivery of nucleic acid, Huang, et al. September 26, 2006.

7,108,863, Liposome composition for improved intracellular delivery of a therapeutic agent, Zalipsky, et al. September 19, 2006.

7,101,570, Liposome compositions and methods for the treatment of atherosclerosis, Hope, et al. September 5, 2006.

7,101,532, Liposome containing hydrophobic iodine compound, Aikawa, et al. September 5, 2006

7,037,520, Reversible masking of liposomal complexes for targeted delivery, Smyth Templeton, May 2, 2006

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